AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method for providing servicewith guaranteed Quality of Service (QoS) in IP access networks, each of the IP access networks comprises an edge router connected to a backbone network, and an access network end device connected to subscribers, comprising:

a. a service entity at network service control layer obtaining a calling subscriber address and a called subscriber address and QoS requirement for a service through analyzing a service request of the calling subscriber, then requesting resources to IP access networks corresponding to the calling subscriber and the called subscriber, respectively;

b. edge routers corresponding to the calling subscriber and the called subscriber judging whether enough resources can be provided for this service according to current resource condition, if so, executing ~~step c~~, otherwise rejecting the service request of the calling subscriber; and

c. if there is an upward traffic stream sent from one of the calling subscriber and the called subscriber to the corresponding IP access network for this service, the corresponding edge router informing the corresponding access network end device of the QoS requirement for the service, and the corresponding access network end device ~~processing the upward traffic stream~~ performing bandwidth limitation according to

bandwidth parameters in the QoS requirement informed by the corresponding edge router for the upward traffic stream;

If there is a downward traffic stream to be sent to one of the calling subscriber and the called subscriber from the corresponding IP access network for this service, the corresponding edge router setting priority in the corresponding IP access network for this service and forwarding the downward traffic stream to the corresponding subscriber according to the priority set by the corresponding edge router.

2. (Previously Presented) The method according to claim 1, wherein in step c, the edge router can transform service level into priority in the IP access network for the downward traffic stream and forward the downward traffic stream to the corresponding subscriber; or can classify the downward traffic stream first, after identifying the downward traffic streams, transform the identified downward traffic stream into priority in the IP access network and forward the downward traffic stream.

3. (Previously Presented) The method according to claim 1, wherein step C is executed after the edge router has informed the service entity at the network service control layer that the IP access network can provide enough resources for the service and has received confirmation from the service entity.

4. (Previously Presented) The method according to claim 1, further comprising a step of the edge router obtaining at least topology structure of the IP

access network and bandwidth resources of each interface of the IP access network through static configuration or dynamic management protocol.

5. (Previously Presented) The method according to claim 1, after the access network end device receives the QoS requirement for the service from the corresponding edge router in step c, the method further comprising:

setting items of a stream classification table according to parameters for identifying the upward traffic stream contained in the QoS requirement;

classifying the upward traffic stream sent from one of the calling subscriber and the called subscriber; and

managing bandwidth according to bandwidth parameters for the upward traffic stream when matched with the items of the stream classification table, and processing the upward traffic stream when not matched as an upward traffic stream without guaranteed QoS.

6. (Previously Presented) The method according to claim 5, wherein the step c comprises:

setting the downward traffic stream with a high priority and then forwarding the downward traffic stream when the access network end device is an Ethernet or IP Digital Subscriber Line Access Multiplexer (DSLAM); and

sending the downward traffic stream to Permanent Virtual Circuit (PVC) with guaranteed QoS for further forwarding when the access network end device is an ATM DSLAM.

7. (Previously Presented) The method according to claim 5, wherein parameters for identifying the upward traffic stream can be a four-element group, a five-element group or a seven-element group.

8. (Previously Presented) The method according to claim 1, further comprising: before receiving the QoS requirement from the edge router of the IP access network for the upward traffic stream, the access network end device processing the upward traffic stream sent from one of the calling subscriber and the called subscriber as an upward traffic stream without guaranteed QoS.

9. (Previously Presented) The method according to claim 2, wherein network devices between the edge router and the access network end device of the corresponding IP access network forward the downward traffic stream according to the priority of the downward traffic stream.

10. (Previously Presented) The method according to claim 5, further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command to the access network end device, and the access network end device deleting corresponding items of the stream classification table according to the QoS release command.

11. (Previously Presented) The method according to claim 6, further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command to the access network end device, and the access network end device deleting corresponding items of the stream classification table according to the QoS release command.

12. (Previously Presented) The method according to claim 7, further comprising: after the calling subscriber terminates the service, the edge router sending a QoS release command to the access network end device, and the access network end device deleting corresponding items of the stream classification table according to the QoS release command.

13. (Previously Presented) The method according to claim 5, wherein managing bandwidth according to bandwidth parameters comprises: performing bandwidth limitation, by the access network end device, for the upward traffic stream matched with the items of the stream classification table according to the bandwidth parameters.

14. (New) A method for providing a service call with Quality of Service (QoS) in IP access networks, comprising:

a. a service entity at network service control layer obtaining a calling subscriber address and a called subscriber address and QoS requirement for a service call through analyzing a service request from the calling subscriber, wherein the calling subscriber resides in a first IP access network that accesses an internet backbone network through a first edge router, wherein the called subscriber resides in a second IP access network that accesses the internet backbone network through a second edge router, and then requesting resources from the first and second edge routers for the service call;

b. the first and second edge routers judging whether enough resources can be provided for the service call according to current resource condition, if so, executing c., d., and e., otherwise rejecting the service request from the calling subscriber;

c. establishing a connection in accordance with the QoS requirement for transmitting the service call between the first and second edge routers via the internet backbone network;

d. the first edge router informing the QoS requirement for the service call to a first IP access network end device, in the first IP access network, connected to the calling subscriber, and the first IP access network end device performing bandwidth limitation according to bandwidth parameters in the QoS requirement informed by the first edge router for the transmitting the service call from the calling subscriber to the first edge router; and

e. the second edge router setting priority in the second IP access network for the service call and forwarding the service call to the called subscriber according to the priority set by the second edge router.